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DESCRIPTIONS OF NEW BATS (*CHOERONISCUS*  
AND *RHINOPHYLLA*) FROM COLOMBIA

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An imperfectly known endemic mammalian fauna is found on the Pacific coast and Andean foothills of northwestern Ecuador and Colombia and northward into Panama, where it crosses to the Caribbean slope and continues into Costa Rica and Nicaragua and in some instances even into Mexico. The relatives of its endemic species are mostly South American, but some are Mexican. Species characteristic of this fauna, such as *Carollia castanea*, *Vampyressa nymphaea*, *Heteromys australis*, *Oryzomys bombycinus*, and *Hoplomys gymnurus*, were among the mammals collected in the course of virological studies of the Rockefeller Foundation on the Pacific coast of Colombia in 1962 and 1963. In addition there were striking new species of *Choeroniscus* and *Rhinophylla*.

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All measurements are in millimeters. For definition of cranial measurements see Handley (1959: 98-99). Capitalized color terms are from Ridgway (1912).

## CHOERONISCUS

There are few specimens of the poorly known glossophagine genus *Choeroniscus* in collections. The limits of variation in the genus are incompletely known (Sanborn, 1954), and until now its separation from *Choeronycteris* has been questionable. A specimen of a new species of *Choeroniscus* from the west coast of Colombia greatly extends knowledge of the genus and strengthens its stature as a genus distinct from *Choeronycteris*.

***Choeroniscus periosus*, new species**

*Holotype*: USNM no. 344918, adult female, alcoholic and skull, collected 1 February 1963, by Wilmot A. Thornton, at the Río Raposo, near sea level, 27 km south of Buenaventura, Departamento de Valle, Colombia, original number 592.

*Etymology*: Greek *periosus*, immense.

*Distribution*: Known only from the type-locality.

*Description*: Body size large (forearm 41.2; greatest length of skull 30.3). Dorsal mass effect coloration (after three month's submersion in formalin) rich blackish-brown; basal three-fourths orange-brown in dorsal hairs; underparts but slightly paler than dorsum. Vibrissae abundant and conspicuous on snout and chin. Ears, chin, noseleaf, lips, membranes, legs, feet, and fingers blackish. Lancet of noseleaf relatively narrow, with three notches on each side near tip, and with prominent vertical median ridge on anterior face. Membranous "tongue-channel" on chin unusually well developed, protruding 1.5 mm forward and 2.0 mm up from lower lip; dorsal and anterior edges scalloped. Ear short, tip rounded, antitragus well defined; tragus spatulate, 3.8 mm long, with margins entire (except for prominent posterior notch opposite anterior base), and with anterior edge and posterior basal lobe thickened. Interfemoral membrane broad, naked. Hind legs naked. Calcar shorter than foot, not lobed.

Rostrum longer than braincase; cranium little elevated from basicranial plane; profiles of rostrum and cranium evenly tapered, without sharp angle in between; no orbital ridges or processes; zygoma absent; lambdoidal crest low; sagittal crest absent; maxillary tooththrows subparallel; palate relatively broad anteriorly and narrow posteriorly; posterolateral margin of palate not notched; postpalatal extension parallel-sided, tubular, reaching posterior to level of mandibular fossae; mesopterygoid fossa reduced to a straight-sided, V-shaped notch; hamular processes greatly inflated and approaching, but not quite touching, auditory bullae; basal pits prominent, separated by broad median ridge.

Dentition weak. Dental formula  $\frac{2}{0}, \frac{1}{1}, \frac{2}{3}, \frac{3}{3} = 30$ . Upper incisors small, unicuspid; inner upper incisors ( $I^1$ ) separated by a space three to four times the width of the teeth; larger, outer upper incisor ( $I^2$ ) separated by somewhat less than its own width from  $I^1$  and from canine.

Upper canine with small posterobasal cusp. Upper premolars very narrow; median cusp, particularly of anterior premolar, very little higher than well-defined anterior and posterior cusps. Upper molars with cusps greatly reduced;  $M^1$  and  $M^2$  similar in size and shape,  $M^3$  slightly shorter and broader. Upper premolars widely spaced; molars closer together, but not touching. Lower premolars narrow, with well-defined, subequal anterior, posterior, and median cusps. Metaconid cusps of lower molars enlarged and protoconid cusps reduced; paraconid cusps in line with protoconids, not inflected. Anterior lower premolar close behind, but not touching, canine; spaces between premolars great, but spaces between  $P_4$  and  $M_1$  and between other molars, much less.

*Measurements* (All external dimensions taken from specimen in alcohol): Total length 62, tail vertebrae 10, hind foot 12, ear from notch 15, forearm 41.2, tibia 13.3, calcar 7.9.

Greatest length of skull 30.3, zygomatic breadth 11.0, postorbital breadth 4.7, braincase breadth 9.9, braincase depth 7.4, maxillary tooth row length 10.8, postpalatal length 7.0, palatal breadth at  $M^3$  5.2, palatal breadth at canines 4.6.

*Comparisons*: *C. periosus* can be distinguished from all other species of *Choeroniscus* by its longer (longer than braincase), more robust rostrum; more inflated hamular process; and larger size (e.g., forearm 41.2 vs. 32.4–36.9; greatest length of skull 30.3 vs. 19.3–24.4; maxillary tooth row 10.8 vs. 6.5–9.2). It is allied with the Amazonian species *C. minor*, *C. intermedius*, and *C. inca*, and distinguished from the Central American and northern South American *C. godmani*, in having the posterolateral margin of the palate unnotched and the cranium not so markedly elevated from the basicranial plane.

*Remarks*: With the addition of *C. periosus*, the genus *Choeroniscus* includes five nominal species. *C. periosus* is much the largest species; *C. inca* Thomas, *C. intermedius* Allen and Chapman, and *C. minor* Peters are intermediate in size; and *C. godmani* Thomas is smallest.

*Choeroniscus* is the most specialized of a group of nominal glossophagine genera which may be characterized briefly as follows:

Teeth nearly normal	pterygoids normal	<i>Lichonycteris</i>
Teeth slightly reduced	pterygoids?	<i>Scleronycteris</i>
Teeth reduced; PM high	pterygoids slightly specialized	<i>Hylonycteris</i>
Teeth reduced; PM high	pterygoids specialized	<i>Choeronycteris</i>
Teeth greatly reduced; PM low	pterygoids greatly specialized	<i>Choeroniscus</i>

*Lichonycteris* has 26 teeth and the other genera have 30.

As here understood, the genus *Choeronycteris* includes *Musonycteris harrisoni* Schaldach and McLaughlin, which is distinguished from *Choeronycteris mexicana* Tschudi principally by its strikingly elongated rostrum and associated modifications in proportions. The disparity in

rostral proportions is much greater, however, between *Choeroniscus godmani* and *Choeroniscus periosus* than between *Choeronycteris mexicana* and *Choeronycteris harrisoni*. Thus, to distinguish *C. harrisoni* as representative of a separate genus tends to obscure relationships in this segment of the Glossophaginae. *Musonycteris* should be regarded as a synonym of *Choeronycteris*.

*Specimens examined:* *Choeroniscus godmani*. COLOMBIA: META: Restrepo, 1 (MCZ). COSTA RICA: Vicinity of San José, 3000 ft, 5 (AMNH). HONDURAS: Cantoral, 1 (AMNH); La Flor Archaga, 2 (AMNH). MEXICO: CHIAPAS: Pijijiapan, 50 m, 1 (UMMZ); GUERRERO: 1 mi. SE San Andrés de la Cruz, 700 m, 1 (UMMZ); OAXACA: 16 km ENE Piedra Blanca, 1 (IB); SINALOA: San Ignacio, 700 ft, 1 (KU). NICARAGUA: El Realejo, 1 (KU), 2 (USNM). VENEZUELA: BOLIVAR: 38 km S El Dorado, 1 (UCV); DISTRITO FEDERAL: Caracas (Santa Monica), 900 m, 1 (LS); Chichiriviche, 1 (UCV). *Choeroniscus inca*. BRITISH GUIANA: Kamakusa, 1 (AMNH); Kartabo, 1 (AMNH). ECUADOR: Los Pozos, 2 (AMNH). VENEZUELA: BOLIVAR: Chimantá-tepuí, 1300 ft, 9 (CNHM). *Choeroniscus intermedius*: TRINIDAD: Irois Forest, 1 (AMNH); Maracas, 1 (AMNH), Princetown, 1 (holotype of *C. intermedius*, AMNH); Sangre Grande, 1 (AMNH). *Choeroniscus minor*. BRAZIL: PARÁ: Belém, 3 (USNM). PERU: PASCO, San Juan, 900 ft, 1 (USNM); Puerto Melendez, above Marañon, 1 (AMNH). *Choeroniscus periosus*. COLOMBIA: VALLE: Río Raposo, 1 (holotype of *C. periosus*, USNM). Also, numerous specimens of *Lichonycteris*, *Hylonycteris*, and *Choeronycteris* (including *C. harrisoni*).

#### RHINOPHYLLA

The carollinine genus *Rhinophylla* has until now been known only from the basin of the Rio Amazonas and the lowlands of northeastern South America (Husson, 1962: 152-153). The sole representative of the genus, *R. pumilio* Peters, has been regarded as closely related to, but more specialized than, the species of the abundant and widespread genus *Carollia* (Miller, 1907: 147). It is thus rather surprising to find in the collection of W. A. Thornton from the west coast of Colombia a number of specimens of a striking new species of *Rhinophylla* that is even more strongly differentiated from *Carollia* than is *R. pumilio*.

#### *Rhinophylla alethina*, new species

*Holotype:* USNM no. 324988, adult male, skin and skull, collected 13 July 1962, by Wilmot A. Thornton, at the Río Raposo, near sea level, 27 km south of Buenaventura, Departamento de Valle, Colombia, original number 172.

*Etymology:* Greek, *alethinos*, genuine.

*Distribution:* Known only from the type-locality.

*Description:* Size large for genus (forearm 34.9-37.2 mm). Coloration blackish, darkest anteriorly, paler posteriorly. In holotype, head and nape black, shading to Fuscous-Black on rump; underparts varying

from black on chin to Fuscous-Black on chest and to Natal Brown on abdomen. Another specimen (Univ. del Valle 220) slightly paler: Fuscous-Black anteriorly and Natal Brown posteriorly on dorsum, and correspondingly paler on underparts. Hairs of dorsum and abdomen sharply tricolor: at mid-dorsum Slate-Black basally, with broad Benzo Brown median band; on sides, neck, and shoulders median band pales almost to Ecru-Drab and shows through to surface rather prominently. Noseleaf, lips, ears, tragus, fingers, forearms, legs, feet, and all membranes blackish. Fur soft, woolly; legs, feet, interfemoral membranes, and basal two-thirds of forearm hairy; interfemoral membrane fringed. Interfemoral membrane narrow (about 5 mm at base); calcar short (less than length of metatarsals); tibia and forearm stout; pinna with anterior margin convex, posterior margin concave, tip blunt, antitragus triangular; tragus usually blunt, with upper posterior margin entire or notched; lancet of noseleaf longer than broad, upper margins slightly concave; horseshoe of noseleaf with median half of base bound to lip; chin ornament composed of four parts—a central triangular element (apex down), a pair of narrow, elongated lateral elements converging ventrally but not meeting (their outer margin more or less scalloped), and a small, circular median ventral element.

Skull like that of *Rhinophylla pumilio* but rostrum slightly heavier (broader and deeper anteriorly), and a distinct low sagittal crest present.

Dentition, with the exception of inner incisors, extremely weak and reduced; formula  $\frac{2}{2} - \frac{1}{1} - \frac{2}{2} - \frac{3}{3} = 32$ . Inner upper incisor ( $I^1$ ) large, adz-shaped, with cutting edge entire; outer upper incisor ( $I^2$ ) small, featureless. Canine simple, without cingulum or subsidiary cusps. Anterior upper premolar ( $P^1$ ) small and featureless; posterior upper premolar ( $P^2$ ) almost rectangular, longer than broad, with large median cusp and tiny posterior cusp.  $M^1$  short and  $M^2$  shorter, almost triangular in occlusal shape, each with a single prominent internal cusp (the metacone); protocone obliterated; paracone barely indicated in  $M^1$ , obliterated in  $M^2$ ; parastyle and metastyle, particularly the latter, low and weakly developed;  $M^3$  reduced to a tiny featureless spicule.

Inner lower incisors ( $I_1$ ) large, trilobed (occasionally bilobed);  $I_2$  small, unicuspid. Canine simple, without accessory cusps. Premolars simple, unicuspid; anterior premolar wider than any succeeding tooth. Molars very narrow, tricuspid; anterior and posterior cusps low on  $M_1$  and  $M_2$  and more or less obliterated on  $M_3$ .

*Measurements* (Extremes in parentheses, preceded by means and followed by number of individuals (only adults included)). Measurements of the total length, ear, and weight were made by the collector in the field. All other measurements were made by me in the laboratory.): Total length ♂ 55, 58; hind foot ♀ 11 (11–11) 4, ♂ 11 (10–11) 6; ear from notch ♂ 15, 16; forearm ♀ 36.4 (35.5–37.2) 4, ♂ 35.7 (34.9–36.6) 4; tibia ♀ 12.3 (11.2–12.9) 4, ♂ 12.0 (11.5–12.5) 4; calcar ♀ 3.1 (3.0–3.5) 4, ♂ 3.4 (3.3–3.5) 5. Weight ♂ 12 gm, 16 gm.

Cranial measurements of male holotype: Greatest length of skull 19.5, zygomatic breadth 10.7+; postorbital breadth 5.3, braincase breadth 8.9, braincase depth 7.5, maxillary tooth row length 4.9, postpalatal length 7.2, palatal breadth at M<sup>2</sup> 6.4, palatal breadth at canines 5.1.

*Comparisons:* Specimens of *R. alethina* are slightly larger than specimens of *R. pumilio* from the valley of the Rio Amazonas; have the inter-femoral membrane narrower; calcar shorter; hind legs stouter; legs, feet, and inter-femoral membrane (including posterior margin) more hairy; fur more woolly in texture; and coloration, including that of lips, ears, and membranes, darker, more blackish. As noted in the description, the skulls of the two species are very similar. However, except for the inner incisors, the teeth of *R. alethina* are smaller and weaker, and the tooth rows are shorter than in *R. pumilio*. *R. alethina* has cutting edges of I<sup>1</sup> and I<sub>2</sub> entire rather than notched; P<sup>4</sup> shorter; cusps of upper molars more reduced; and I<sub>2</sub>, P<sup>1</sup>, M<sup>3</sup>, and lower molars notably smaller.

Aside from its relative *R. pumilio*, *R. alethina* is likely to be confused only with the Glossophaginae and with *Carollia castanea*. Its non-extensible tongue and lack of rostral elongation are sufficient to distinguish it from the Glossophaginae. From *Carollia castanea* it can be distinguished easily by its blacker coloration, narrow, fringed inter-femoral membrane, hairy legs, simple chin ornament, and smaller, simplified teeth. In most of these characteristics *R. alethina* differs more from the species of *Carollia* than *R. pumilio* does.

*Specimens examined:* *Rhinophylla alethina*. COLOMBIA: VALLE Rio Raposo, 11 (including the holotype, USNM), 1 (Univ. del Valle). *Rhinophylla pumilio*. BRAZIL: PARÁ: Belém, 52 (USNM). ECUADOR: Boca de Río Curaray, 2 (USNM). PERU: PASCO: San Juan, 900 ft, 4 (USNM).

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